

### **Remarks**

Claims 1, 7, 22-27, 29-34, 37, 39, 41-49, 51, 52, and 57-65 are pending. Claims 3, 5, 6, 16, 17 and 50 have been canceled without prejudice. Claims 1, 23, 24, 27, 39, 41, 52 and 58 have been amended. Support for the claim amendments can be found throughout the application as filed. Therefore, no new matter has been added. Favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

### **Rejections Based on 35 U.S.C. § 112¶2**

Claims 1, 16, 17, 23, 24, 27, 30, 50, 52, 58, and their corresponding dependent claims stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite based on the Examiner's contention that they fail to point out particularly and distinctly claim the subject matter which the Applicant regards as the invention. The Applicants respectfully traverse. Organized in separate paragraphs below are the Applicants' responses to each of the Examiner's specific rejections.

#### *Claims 1, 23, 24, 27, 31 and 58*

The Examiner rejects claims 1, 23, 24, 27, 31 and 58 as indefinite based on the appearance of the following phrases: "alkyl or alkenyl groups"; "alkylene group"; "heteroarylene group"; and "R1 and R2 may be taken together to form a ring"; and the alleged lack of adequate elaboration in the Specification as to the meaning of each of them.

The Applicants respectfully remind the Examiner that *MPEP* 2173.02 states: "The examiner's focus during examination of claims for compliance with the requirement for definiteness of 35 U.S.C. § 112, second paragraph, is whether the claim meets the threshold requirements of clarity and precision, not whether more suitable language or modes of expression are available. When the examiner is satisfied that patentable subject matter is disclosed, and it is apparent to the examiner that the claims are directed to such patentable subject matter, he or she should allow claims which define the patentable subject matter with a reasonable degree of particularity and distinctness. Some latitude in the manner of expression and the aptness of terms should be permitted even though the claim language is not as precise as the examiner might desire."

With respect to “alkyl or alkenyl groups”, paragraph [0020] *inter alia* states that such groups “preferably [have] from about six to about eighteen carbon atoms.” Accordingly, the Applicants have amended claims 1, 23, 24, 27, and 58 to include the phrase “consisting of from about six to about eighteen carbon atoms” following each appearance of “alkyl or alkenyl groups”. Because the added phrase finds explicit support in application as filed, no new matter has been added to the amended claims. Further, claims 3 and 6 have been canceled because they were rendered redundant by the aforementioned claim amendments.

With respect to “alkylene group”, paragraph [0012] states that “alkylene means a divalent alkane group which may be substituted with one or more heteroatoms such as nitrogen or oxygen.” Moreover, paragraph [0021] states “even more preferably  $R_3$  is  $-(CH_2)_n-$  wherein  $n$  is an integer of from about one to about 10.” The terms “alkane” and “alkyl” are known to one of ordinary skill in the art of organic chemistry to refer to saturated hydrocarbons and monovalent radicals thereof, respectively. In light of these facts, the Applicants respectfully contend that the limitation set forth in paragraph [0020] as to “alkyl” is also applicable to “alkane” which, in turn, forms the basis for the definition of “alkylene group” provided in the application as filed.

Accordingly, the Applicants have amended the definitions of  $R_3$  in claims 1 and 27 to read “ $R_3$  is  $-(CH_2)_n-$  wherein  $n$  is an integer of from about one to about 10”; claim 5 has been cancelled in light of this amendment to claim 1. Further, the remaining instances of “alkylene group” in the pending claims have been amended to include the phrase “consisting of from about six to about eighteen carbon atoms” following each additional appearance of “alkylene group.”

With respect to “heteroarylene group”, paragraph [0012] states that “heteroarylene means a divalent heteroaromatic group such as pyrrolene, furanylene, thiophenylene, pyridinylene, etc.” Importantly, each of the specific moieties recited comprises only one heteroatom, which is selected from the group consisting of O, N and S. Further, the subsequent definitions of terms in paragraph [0012], which relate to substituents that comprises a heteroatom, all include the phrase “which may be substituted with one or more heteroatoms such as nitrogen or oxygen”. Accordingly, the Applicants have amended claims 1 and 27 to include the phrase “selected from the group consisting of divalent heteroaromatic groups comprising only one heteroatom selected from the group consisting of O, N and S” following each appearance of “heteroarylene group.”

With respect to “R<sub>1</sub> and R<sub>2</sub> may be taken together to form a ring”, paragraph [0023] is reproduced below.

[0023] In some instances, two or more adjacent substituents such as or R<sub>1</sub> and R<sub>2</sub>, R<sub>4</sub> and R<sub>5</sub>, R<sub>6</sub> and R<sub>7</sub>, and/or R<sub>7</sub> and R<sub>8</sub> may be taken together to form a ring such as a 5-7 membered carbocyclic ring. Examples of such carbocyclic rings include cyclopentyl and cyclohexyl rings.

Based on this quotation from the application as filed, and in light of the paragraph above discussing the guidance provided by the MPEP with respect to an Examiner’s application of the requirement for definiteness, the Applicants respectfully contend that the phrase “R<sub>1</sub> and R<sub>2</sub> may be taken together to form a ring” is not indefinite.

*Claims 23 and 30*

The Examiner rejects claims 23 and 30 as indefinite based on the appearance of the phrase “alkylene groups may be further substituted”; and the alleged lack of adequate elaboration in the Specification as to its meaning. Claims 23 and 30 have been amended to remove the phrase “, and in which the alkyl, phenyl and alkylene groups may be further substituted.”

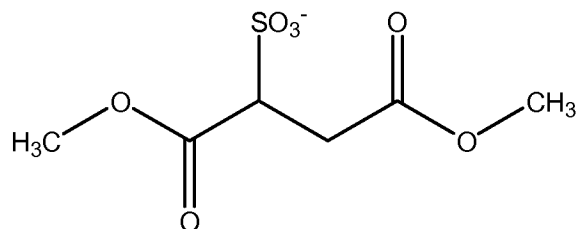
*Claims 16, 17 and 50*

The Examiner rejects claims 16, 17 and 50 as indefinite based on the appearance of the term “hydrocarbon”; and the alleged lack of adequate elaboration in the Specification as to its meaning. While the Applicants respectfully disagree with the Examiner, who provided a definite definition of the term in stating the rejection, in order to expedite prosecution, claims 16, 17 and 50 have been cancelled without prejudice.

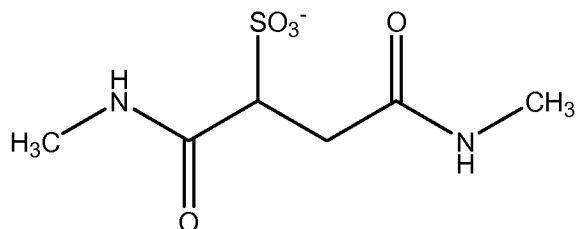
*Claims 52 and 58*

The Examiner rejects claims 52 and 58 as indefinite based on the appearance of the terms “bis(organo)ester derivative” and “bis(organoamide) derivative”; and the alleged lack of adequate elaboration in the Specification as to their meanings. In paragraph [0013], the Applicants disclosed that “As used herein, ‘docusate variant’ is taken to include the compounds described by chemical structures I and III described below and includes the anions of bis(organo)ester derivatives of sulfosuccinic acid and anions of bis(organoamide) derivatives of

sulfosuccinic acid.” In light of this sentence, the Applicants respectfully contend that one of ordinary skill in the art of organic chemistry would understand the rejected terms to bis(esters) and bis(amides) derived from sulfosuccinic acid. Exemplary structures are provided below.



*bis(methyl ester) of sulfosuccinic acid anion*



*bis(methyl amide) of sulfosuccinic acid anion*

With reference to paragraphs [0063], [0064], [0076], [0077], [0078] and [0079], the Applicants respectfully contend that application as filed explicitly discloses, in addition to the so-called docusate anion, the following anions of bis(organo)ester and bis(organoamide) derivatives of sulfosuccinic acid: di-n-hexyl ester of sulfosuccinic acid; di-cyclohexyl ester of sulfosuccinic acid; di-n-octyl ester of sulfosuccinic acid; di-n-butyl ester of sulfosuccinic acid; di-isobutyl ester of sulfosuccinic acid; di-neopentyl ester of sulfosuccinic acid; di-n-heptyl ester of sulfosuccinic acid; and di-(N-ethyl-N-(2-ethylhexyl)) amide of sulfosuccinic acid.

Accordingly, claims 52 and 58 have been amended to replace “(i) docusate, (ii) an anion of a bis(organo)ester derivative of sulfosuccinic acid, and (iii) an anion of a bis(organoamide) derivative of sulfosuccinic acid” with “docusate; di-n-hexyl ester of sulfosuccinic acid; di-cyclohexyl ester of sulfosuccinic acid; di-n-octyl ester of sulfosuccinic acid; di-n-butyl ester of sulfosuccinic acid; di-isobutyl ester of sulfosuccinic acid; di-neopentyl ester of sulfosuccinic acid; di-n-heptyl ester of sulfosuccinic acid; and di-(N-ethyl-N-(2-ethylhexyl)) amide of

sulfosuccinic acid”. The claim amendments do not introduce new matter. Moreover, the Applicants respectfully contend that the amended claims are definite.

*Claim 58*

The Examiner rejects claim 58 as indefinite based on the appearance of the phrase “said cation being non-tetrahedrally symmetric”; and the alleged lack of adequate elaboration in the Specification as to its meaning. Claim 58 has been amended to remove the phrase “, said cation being non-tetrahedrally symmetric.”

*Claim 58*

The Examiner rejects claim 58 as indefinite based on the appearance of the phrase “y is greater than 0”. Claim 58 has been amended to replace “greater than 0” with “1 or 2”. The Applicants respectfully assert that the phrase “1 or 2” is definite. Moreover, the phrase “1 or 2” in this context is not new matter because: (a) in paragraph [0004] the Applicants explicitly teach “[bmim]-Al<sub>2</sub>Cl<sub>7</sub> and [emim]-Al<sub>2</sub>Cl<sub>7</sub>”; and (b) in paragraph [0055] the Applicants explicitly teach “Exemplary Lewis Acid ionic liquids for the blend include ionic liquids having an aluminum chloride anion....”

Accordingly, the Applicants respectfully request withdrawal of the claim rejections under 35 U.S.C. § 112¶2.

**Rejections Based on 35 U.S.C. § 102(b)**

Claims 1, 3, 5-7, 16, 17, 22-24, 26, 27, 29-31, 33, 34, 37, 39, 41-45, 47, 48, 50-52 and 57-65 stand rejected under 35 U.S.C. § 102(b) based on the Examiner’s contention that they are anticipated by Kaneko et al. (JP08-030013). The Applicants respectfully disagree.

With reference to the translation of Kaneko graciously provided by the Examiner, the Applicants respectfully contend that Kaneko teaches only dilute aqueous solutions of commercially available diesters of sulfosuccinic acid. To these dilute aqueous solutions Kaneko teaches the addition of lithium hydroxide, sodium hydroxide, an ammonium hydroxide, or an phosphonium hydroxide to produce a dilute aqueous solution of the corresponding lithium, sodium, ammonium or phosphonium salts of the aforementioned diesters of sulfosuccinic acid. See Kaneko, paragraph [0010].

In stark contrast, rejected independent claims 1, 27, and 43 explicitly require the claimed compositions to comprise “greater than 70 weight percent of an ionic liquid...” Based on its explicit teachings, Kaneko does not teach all of the limitations of any of claims 1, 27, and 43, or any of the associated dependent claims. Further, independent claims 52 and 58 require the presence of supercritical carbon dioxide and an aluminum-anion-based ionic liquid, respectively. Kaneko does not teach the presence of either of these elements. Therefore, Kaneko does not teach all of the limitations of any of claims 52 or 58, or any of the associated dependent claims.

Accordingly, the Applicants respectfully request withdrawal of the claim rejections under 35 U.S.C. § 102(b).

### **Fees**

The Applicants believe that they have provided for any and all fees that are due in connection with the filing of this Response. Nevertheless, the Commissioner is hereby authorized to charge any additional fees due in connection with the filing of this Response to our Deposit Account, **No. 06-1448**, reference **SAX-008.01**.

### **Conclusion**

The Applicants believe that the pending claims are in condition for allowance. If a telephone conversation with Applicants’ Attorney would expedite prosecution of the above-identified application, the Examiner is urged to contact the undersigned.

Respectfully submitted,  
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